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Comments to the California Climate Action Team On the Draft Report to the Governor and Legislature Climate Change Strategies

By The

Engine Manufacturers Association
January 31, 2006

The Engine Manufacturers Association (EMA) is the trade association representing the leading manufacturers of internal combustion engines. EMA's 29 member companies manufacture and market engines used in heavy-duty trucks and buses, construction and agricultural equipment, marine vessels, grounds care and utility equipment, and stationary power generation. The primary mission of EMA is to serve as the voice of the industry on emissions and environmental issues with government and regulatory agencies. EMA works closely with the US Environmental Protection Agency, California Air Resources Board, and other state and local agencies on issues related to emissions from mobile source and stationary engines.

EMA is pleased to provide the following comments and recommendations to the California Climate Action Team (Team) regarding the strategies and recommendations contained in the Team's Draft Report to the Governor and Legislature (Draft) that was posted on the Team's website in December 2005 and the draft economic assessment posted in January 2006. The draft report provides a comprehensive overview of climate change issues in California and was assembled under a very tight deadline. EMA appreciates the opportunity to provide comments on the draft report.

Among the Team's recommendations are several items affecting our members' products including heavy-duty engine efficiency improvements, the expanded use of biofuels, idling reduction, and the expansion of Combined Heat and Power (CHP) to generate electricity. The Team's final recommendations on these items, as well as how California implements any final recommendations, may significantly affect our member's business activities in the State, our members' products, and the owners and operators of vehicles and equipment. Consequently, engine manufacturers should be considered key stakeholders as the process moves forward.

1. Efforts to reduce greenhouse gases in California should be based on a cooperative approach with affected industries.

The Draft provides a series of wide-ranging recommendations to reduce greenhouse gas emissions originating in CA. Since the production of greenhouse gases is a physical

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consequence of converting natural resources into energy or products (including natural processes of decay), efforts to control and /or reduce greenhouse gas emissions will necessarily involve virtually every segment of California society and business. It is therefore important that the Team consider the numerous affected stakeholders as partners in the reduction effort and work with them to identify the best and most cost-effective way to reduce greenhouse gas emissions.

To date, much of the Draft has been developed by the interaction of various California regulatory and policy agencies with little input from industry stakeholders or the business community. As California moves forward to revise and consider the recommendations in the Draft, the involvement of the industry stakeholders is key to successful implementation of the program. The Team needs to be expanded to include a broader range of interests from the private sector including industries potentially affected by the recommended greenhouse gas reductions. Viable programs are best developed and successfully implemented through the involvement and cooperation of those affected.

2. **The Team's goal of increased heavy-duty engine efficiency is aligned with Engine Manufacturers goals and activities.**

One recommendation in the Draft is to increase the efficiency of, and consequently reduce decrease greenhouse gas emissions from, heavy-duty engines and vehicles. Increased fuel economy and higher efficiencies are already very important objectives of engine manufacturers, since these issues also are very important to our customers. Increased fuel economy and more efficient engines provide direct cost savings to our customers and have always been a key marketing factor for heavy-duty engines. Therefore, the free market already exerts great pressure on engine and vehicle manufacturers to produce the most efficient engines and vehicles possible.

Customers in the market for new vehicles or equipment want to purchase the highest efficiency heavy-duty engines and vehicles that meet their performance requirements. Doing so saves them money from lower fuel and operating costs over the life of the vehicle, and that makes them more competitive in the marketplace. Although driven by the need to reduce operating costs, these same market-based pressures also work to reduce greenhouse gas emissions since the only practical way to reduce CO_2 from engines is to increase their fuel efficiency. Customer pressures to reduce costs in the heavy-duty engine market provide a strong force for engine manufacturers to increase efficiency and reduce greenhouse gas emissions.

Because of the above facts, the Team's long term objective to increase engine efficiency is already aligned with the long-term objectives of engine manufacturers and our customers. With aligned goals and objectives, EMA believes that engine manufacturers and California can work together to ensure that the highly efficient engines with the lowest greenhouse gas emissions technically achievable are brought to the market in a timely manner.

3. **Engine Manufacturers are fully engaged in research and development to improve the efficiency of engines, and California should consider the industry a valuable asset in efforts to reducing greenhouse gas emissions in the State.**

Engine manufacturers are already engaged in research and development efforts to bring more efficient engines with better fuel economy to the marketplace. In the heavy-duty vehicle sector, this includes government-industry programs such as the U. S. Department of Energy's 21st Century Truck Program, a cooperative, jointly funded research effort of several engine manufacturers, US DOE, and academic institutions. This long-term, multiyear effort is investing millions of dollars in research to significantly improve the energy and fuel efficiency of heavy-duty trucks.

EMA members have also jointly funded and participated to two significant efforts to improve the efficiency of gaseous-fueled engines used in stationary applications to generate electricity. These two programs, the Advanced Reciprocating Engine Study(ARES) co-sponsored with DOE, and the Advanced Reciprocating Internal Combustion Engine (ARICE) project with the California Energy Commission are developing technology to increase the energy efficiency of the engines and at the same time reduce other emissions. The goals of these programs is to increase the efficiency of such engines to 50% while significantly reducing NOx emissions by 2010.

Making more efficient and lower emitting engines is nothing new or novel to engine manufacturers, and they have already made significant improvements. Current research and development efforts are continuing to make progress, and the introduction of advanced diesel-fueled and gaseous-fueled engines has already made substantial reductions in fuel use and greenhouse gas emissions through these efforts. Importantly, those efficiency improvements and greenhouse gas reductions have been made without regulatory mandates; rather, reductions were made because the commercial market demands better products. Those customer market demands will continue to work to increase engine efficiency and reduce greenhouse gas emissions in the future.

4. **The Draft contains several recommendations affecting engine manufacturers that need further discussion and refinement.**

The draft Team report contains several proposals affecting engine manufacturers' products and their customers that have the potential to reduce greenhouse gas emissions. These include efforts to improve efficiency of heavy-duty engines, the introduction of biofuels, programs related to idling and use of auxiliary power units, and the expansion of combined heat and power (CHP) to produce electricity. These recommendations provide a good starting point for discussion. However, if programs addressing these topics are to be successfully implemented, much more discussion and refinement are needed with affected stakeholders.

As the draft recommendations are considered, the Team and California agencies need to work more closely with the affected industries to develop a final set of recommendations and examine the best way to actually achieve real greenhouse gas reductions. EMA believes that it is

in the best interest of all parties to fully evaluate and discuss the draft recommendations and their potential implementation before any additional steps are taken. Regarding the issues noted above, engine manufacturers provide the innovation and technology that can help California reduce greenhouse gas emissions in a cost-effective manner, and it is critical that the Team discuss these issues with these stakeholders.

EMA believes that a key recommendation in your final report to the Governor and Legislature should be to provide ongoing opportunities for California and stakeholders to explore potential solutions and options to reduce greenhouse gas emissions. Additional outreach efforts and discussions with the business community should be completed before any final greenhouse gas reduction plan is developed. The draft report should not be considered a final roadmap at this point.

5. **The recommendations regarding engines and fuels need further evaluation and refinement before they can be included in an integrated greenhouse gas reduction strategy.**

EMA has the following comments and concerns with the specific recommendations in the Draft. Although EMA believes that cost-effective greenhouse gas reductions may be achievable, many issues need to be resolved, especially with regard to how California proposes to develop and implement emissions reduction programs in these sectors.

Heavy-Duty Engine Efficiency - The Draft proposes to increase efficiency in the heavy-duty vehicle sector and projects a very modest greenhouse gas reduction result. The report cites a goal to increase efficiency by 68% from the DOE 21st Century Truck Program.

The efficiency improvement goal of the 21st Century Truck Program should be considered a long-term objective and not an achievable or feasible target. The stated goal was developed to spur and focus DOE and engine and truck manufacturer's research effort and is intended to challenge industry efforts. It is not intended to be a technologically or economically feasible goal, and there is certainly no guarantee that it can be reached. Although suitable for a long-term research objective, it is not suitable as a basis to establish real-world greenhouse gas reduction targets or economic assessments.

The Team needs to work with engine and truck manufacturers to develop and adopt some realistic and technologically feasible improvement goals for the CA greenhouse gas reduction program.

Expanded Use of Biofuels – One program with considerable potential to reduce net greenhouse gas emissions from the transportation sector is the transition to more biofuels such as ethanol and biodiesel. EMA supports the additional use of biofuels as long as any resultant fuel does not adversely affect either current or future engines. The expansion of biofuels in California must be carefully controlled and coordinated with engine manufacturers.

Engines and fuels are an integrated system that must work together. Changes in fuels will affect engine performance as well as engine emissions. It is, therefore, critical that any

addition of biofuels be totally compatible with the engine and emissions control system in which it will be used. The expanded use of biofuels in California cannot be done unilaterally without consideration of the available engine technology and capabilities and must consider the impacts of those fuels on engine operation, durability, performance, and emissions. Some issues to incorporate in programs to expand the use of biofuels include:

- All biofuels must be developed and manufactured to acceptable industry standards and specifications. The quality of the base biofuel and any blend must be maintained.

- Biofuels often have lower energy content than petroleum-based fuels and their use can actually decrease engine fuel efficiency. California must complete a careful analysis of these effects on greenhouse gas emissions and must also consider these fuel effects on any vehicle fuel efficiency goals.

- The impact of the increased use of biofuels to reduce greenhouse gases must be evaluated in light of potential changes to the emission of criteria pollutants.

- The potential introduction of biofuels need to be fully coordinated with engine and vehicles manufacturers in order to avoid damage to the engine or air pollution control equipment.

- Biodiesel base stock must meet the specifications of ASTM D975. In addition, there needs to be a program to ensure fuel quality; recent off-spec biodiesel fuel in Minnesota blended at only 2% caused engine problems and force the suspension of the state's biodiesel program.

- Engine manufacturers currently do not approve biodiesel blends above 5%.

- Ethanol should not be used in diesel fuel. The properties of ethanol and diesel fuel are not compatible and use of ethanol can cause significant safety concerns.

- Ethanol use in gasoline in amounts higher than 10% can have deleterious impacts on engines that are not specifically designed for ethanol fuel. California should not increase the ethanol content in gasoline generally available to the public to a level higher than 10%.

Expanded Use of CHP – The expanded use of Combined Heart and Power (CHP) facilities to generate electricity in California is an excellent opportunity to reduce greenhouse gas emissions. CHP technology can achieve greater than 80% energy efficiency compared to the normal efficiency of 30-40% for conventional power plants. EMA fully supports the expanded use of CHP, but there are currently many institutional and regulatory barriers in California that prevent the economical installation of CHP. The Team needs to review and eliminate these barriers if CHP is to play any significant role in reducing greenhouse gas emissions.

Reduced Idling and Auxiliary Power Units – Efforts to reduce greenhouse gases through idling reduction and use of smaller auxiliary power units or electrification needs to be carefully

evaluated and implemented in a cost-effective manner. California should use voluntary measures whenever possible and should not adopt standards or requirements that may run into legal issues related to the interstate transportation of goods and services or the Clean Air Act.

6. **The Economic Analysis must be more thorough and include a careful analysis of the costs and benefits of greenhouse gas reductions efforts.**

The economic analysis needs to be transparent and clear and should not minimize or dismiss the potential likelihood that the program will result in higher costs than estimated. For example, it is unclear how the current economic assessment can determine that the heavy-duty engine provision has a net benefit to the California economy. First, it is not clear whether the stated goal is even technologically feasible, and second, there is no valid way to determine the cost to produce a heavy-duty engine that could meet the stated efficiency standard. Without a reliable and valid estimate of how much such an engine would cost, how can you determine that there is a net economic benefit to California?

Better and more through efforts are needed to evaluate alternative reduction strategies and to provide the information needed to implement the most cost-effective alternatives. The reality of the situation is that regardless of the potential benefits, greenhouse gas reduction technologies have to be cost-effective in order to be accepted and adopted by the general public.

7. **The Draft report should not be considered a final roadmap.**

The draft report should not be considered a final roadmap. The ultimate success of California's greenhouse gas reduction program depends on the ability of the Team and California agencies to work closely and cooperatively with affected industries. Joint and cooperative efforts are needed to develop a final set of recommendations and identify the best way to achieve the desired reductions. EMA and its members are eager to work with the Team to support California's efforts and the nation to reduce greenhouse gas emissions.